

13 JAN 1964

by A/F

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ECONOMIC IMPACT OF A PARTIAL BLOCKADE OF HAIPHONG CHANNEL

Conclusions

The impact on the economy of North Vietnam of a partial blockade\* of the Haiphong channel to deep-draft shipping for any period of time probably would be relatively small. North Vietnam's economy is one of subsistence agriculture with industry concentrated in a few centers, including Hanoi, Haiphong, Nam Dinh, Viet Tri, and Thai Nguyen. The country is not as vulnerable to a blockade as a country which is not able to feed its own population.

A partial blockade of Haiphong channel would have its greatest impact on the economy during the first 30 days when confusion from rerouting goods, reallocating ships and rolling stock, and reassigning personnel would be at its height. The maximum effect of the blockade, however, would be one only of delay, not of denial, in the delivery of goods. In considering the maximum effect of such a blockade, the time of year at which it occurs is of particular importance, because ship arrivals have not regularly occurred evenly throughout the year but have experienced peaks and low points. If a blockade of two months or more took place at a time when the shipment of major imports (including petroleum products, rolled steel, machinery and equipment) were high or when reserves of petroleum were low, the impact could

\* A partial blockade of Haiphong channel is used throughout this memorandum to mean a closure of the channel to approximately 50 percent of imported goods, [REDACTED]

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be more serious than if the blockade occurred at a time when shipments of major products were low and petroleum reserves were high.

North Vietnam imports all or most of its petroleum products, iron and steel products, machinery, metal manufactures, locomotives, rolling stock, vehicles, spare parts, industrial chemicals, chemical fertilizers, medicines, and raw cotton. If 50 percent of these imported goods could not be received at Haiphong because of the partial blockade of the channel, they could be transhipped by rail without excessive delay through Communist China to Hanoi. Therefore, if a partial blockade of Haiphong channel were to have a significant effect on the economy, the rail line connecting the Chinese border at P'ing-hsiang with Hanoi also would have to be interrupted.

A partial blockade of Haiphong channel would probably not significantly encourage the expansion of other transport facilities within the short period of a few months, mainly because the rail system has the capacity to carry most of the cargo that would be diverted from Haiphong. In the long run, however, the additional cost and time of transporting the trade through China would probably encourage the expansion of other ports and the road and rail service to those ports.

- 2 -

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I. Economic Significance of Foreign Trade

Foreign trade is an important factor in the economic development of North Vietnam and <sup>is equal in value to</sup> ~~accounts for~~ roughly 15 percent of Gross National Product. Economic planning recognizes the continuing dependence of the economy on imports of capital equipment and machinery as well as a wide variety of industrial materials. The value of foreign trade in North Vietnam has more than tripled since 1955, increasing from US \$80 million in 1955 to US \$231 million in 1962. Nearly 86 percent of North Vietnam's foreign trade is with the Communist bloc. Communist China and the USSR have been its principal trading partners, accounting together for about 65 percent of the value of total trade in 1962.

North Vietnam exports agricultural products, minerals, and handicraft products in exchange for imports of manufactured goods. Imports are particularly important in North Vietnam's industrial development program. Priority has been given to imports of complete plant installations, machinery and equipment, and industrial raw materials. Exports of agricultural products, coal, apatite, and cement account for the bulk of North Vietnam's foreign exchange earnings.

- 3 -

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II. Seaborne Trade Through the Port of Haiphong

Nearly all of the seaborne imports of North Vietnam and nearly all of the seaborne exports, except for coal, pass through Haiphong. The port of Haiphong, which has an estimated capacity of about 3,600 tons\* per day, is the only port in the country with any significant facilities for handling general cargo and petroleum in bulk. In 1961 the volume of imports handled at Haiphong amounted to an estimated 380,000 tons and in 1962 and 1963 the volume of imports probably increased to a level between 400,000 and 450,000 tons. Exports through Haiphong are estimated to have amounted to about 700,000 tons in 1962. It is probable that the volume of trade will continue to increase in 1964. Thus at least 1.1 million to 1.2 million tons of North Vietnamese trade per year, or about 3,000 tons per day, pass through the Haiphong channel. In addition a small amount of Chinese trade moves through Haiphong going to or from Yunnan Province, China.

Since North Vietnam has only a few small vessels used mainly for coastal trade, all of its seaborne trade is carried in foreign merchant vessels. An average of 20 to 25 foreign flag vessels call at Haiphong each month. Slightly more than half of these are Sino-Soviet Bloc ships and the remainder consist of ships of many Free World countries. It is believed that about one-half of the Free World vessels are chartered to Bloc countries. The vessels range

\* Tonnages throughout this report are given in metric tons unless otherwise stated.

- 4 -

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in size from 1,000 gross register tons (GRT) to 10,000 GRT but probably average about 5,000 GRT each. Most of the Soviet and European S.tellite vessels which make frequent trips to North Vietnam consist of ships of between 5,000 and 10,000 GRT each. Some Free World vessels are in the same category, although many are under 5,000 tons and engage in trade between Hong Kong and various Southeast Asian countries. The Chinese South Coast vessels that call at Haiphong range in size from 600 GRT to 8,000 GRT. Blockage of the Haiphong channel to deep-draft vessels\* would thus have the greatest effect on Sino-Soviet Bloc ship and the larger of the Free World vessels chartered to the Bloc countries. These ships carry the bulk of North Vietnamese seaborne trade and in particular the materials most important to the welfare of the country. Although recent data are not available, some idea of the amount and type of goods carried by ships of the various countries is available from historical data and from Soviet trade statistics. Presumably most of the Soviet trade is carried on Soviet ships.

- 5 -

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In 1961 Soviet vessels delivered about 200,000 tons of cargo to North Vietnam, and the volume is estimated to have increased in 1962. In 1962, Soviet exports to North Vietnam included a little more than 90,000 tons of petroleum products, most of which probably were delivered by tankers. Soviet ships carried most of the Soviet exports of 39,000 tons of ammonium sulphate and more than 35,000 tons of metal products to North Vietnam. In addition, Soviet trade statistics include the export to North Vietnam of 27 bulldozers, 256 trucks, 5 excavators, and various items of agricultural machinery. Russian ships have been observed in Haiphong unloading these and other large pieces of equipment, such as cranes and generators, as well as timber, equipment spare parts, and bales of cotton.

European Satellite ships delivered an estimated 70,000 tons in 1960 and about 60,000 tons in 1961. Their cargo consisted mainly of fertilizer, machinery and equipment, food, petroleum products, and general cargo. Chinese ships delivered an estimated 140,000 tons in 1960, but the tonnage delivered in more recent years has probably declined considerably due to the economic difficulties in Communist China. The cargo generally included machinery, spare parts, electrical equipment, food, coal, wood, medical supplies, and miscellaneous goods. Free World ships delivered about 42,000 tons of miscellaneous cargo from Free World countries in 1960 and 34,000 tons in 1961. In addition, Free World ships which were time-chartered to Bloc countries carried an unknown quantity of goods to North Vietnam.

- 6 -

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Exports through Haiphong in 1962 included as much as 550,000 tons of  
apatite and possibly 200,000 tons of cement. [REDACTED]

In addition,

exported items included a great variety of agricultural and forestry products.

Although the amount of cargo being handled at Haiphong is near the  
estimated capacity of the port, Haiphong harbor is reported by various ship  
captains to be inefficiently operated. In the last half of 1963 the port  
was said to be continually congested. [REDACTED] at one  
time in August 1963 as many as ten ships were held outside Haiphong harbor  
waiting for dock space. Movement of cargo across the docks apparently is  
slow, although the North Vietnamese have stated that this operation is being  
mechanized. In 1962 the Soviet Union agreed to help expand port facilities  
at Haiphong. Although there is no confirmation that Soviet aid is contributing  
to the project, number 2 wharf was reportedly being rebuilt in September 1963,  
and this construction also contributed to the port congestion.

- 7 -

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III. Effects of a Blockade of Haiphong Channel to Deep-Draft Shipping

A. Shipping Service

If deep-draft vessels could not enter Haiphong channel, some of the cargo normally carried on these vessels could be transported by lighters and other small craft to or from the ships at anchor outside of the port. The effectiveness of this operation would depend on many factors, such as the distance to each ship, the type of cargo, and the availability of small craft. Haiphong harbor has ample harbor craft for normal operations, including 10 or more 100-ton wooden lighters and 30 or more 200-ton steel lighters. A complete craft census for North Vietnam is not available but the government owns at least 16 ocean-going barges, 53 river-type barges (8 known to be self-propelled) 1 transport tanker of 300 GRT, 5 oceangoing tugs, and 14 river-type tugs, as well as other tugs and various miscellaneous craft. In addition to the government-owned fleet, about 500 junks with capacities of up to 50 tons each are available in the harbor and can be used for lighterage purposes. Furthermore, various Chinese vessels could be moved the comparatively short distance to Haiphong from Chinese ports in Kwangtung province and on Hainan Island. These types of craft could probably handle all of the kinds of imported products except the largest pieces of heavy equipment and the petroleum in bulk. Some of the exports could also be handled by lighter, but with considerable loss of efficiency. Most of the exports are

- 8 -

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bulk commodities, which are difficult to handle by small craft, however, and it is likely that the North Vietnamese would ship most of them by rail to Chinese ports.

North Vietnam has only two secondary ports that can accommodate oceangoing vessels, Cam Pha and Hon Gay, located northeast of Haiphong. These two ports are especially equipped to export coal but have very limited facilities for handling any other types of cargo. Since neither port has rail connections with the main rail system, goods transported through these ports would have to be moved by road or coastal ships. Lack of trucks, however, would limit the use of road transport. It is unlikely that the southern port of Ben Thuy, a minor port with a fairway limitation of 21 feet over the bar, would be used for even the smaller oceangoing vessels that normally call at Haiphong because of the lack of port facilities and a rail connection with Hanoi.

Initially, blockade of the Haiphong channel would cause great confusion. Organization of a fleet of small craft for lighter service might require several weeks. The North Vietnamese press has often discussed inefficient loading and unloading operations in all modes of transport and the difficulties of coordination between the various modes of transport. Furthermore, a sudden blockage of the channel would probably confine in the harbor at least 6 oceangoing vessels that normally are at the dock if the port is being used to capacity.

- 9 -

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**B. Interior Transport Connections**

**1. Railroads**

If the blockade of the port of Haiphong were 50 percent effective, it would necessitate shifting about 1,500 to 1,600 tons of cargo per day to some other port or ports. The most economical reallocation would be to shift the entire cargo to South China ports, in particular, Fort Bayard. The goods could then be transported by railroad to Hanoi, a total distance of about 850 kilometers from Fort Bayard. The railroad between these two cities consists of a single track standard-gauge line from Fort Bayard to P'ing-hsiang, China, and a single-track meter-gauge line from P'ing-hsiang to Hanoi. The meter-gauge line, which has the lower capacity of the two sectors, has an estimated capacity of 2,500 to 2,700 tons each way per day (EWPD). The line is reported to be well constructed and maintained. Actual freight traffic over it at present probably averages less than 1,000 tons EWPD, leaving an unused capacity of more than 1,500 tons EWPD. Although the estimates of capacity and of the actual traffic carried on the P'ing-hsiang-Hanoi line are subject to large margins of error, it is estimated that ample excess capacity exists on the line to carry the tonnage which would be diverted by a partial blockade of Haiphong.

Possible congestion at P'ing-hsiang, the transloading point on the border between the standard-gauge rail system of China and the meter-gauge

- 10 -

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system of North Vietnam, might initially limit the actual tonnage transported to a figure somewhat below the theoretical capacity of the line, although no significant delays or limitations on traffic are known to have occurred in the past from the transloading operation. If continued congestion occurred at the transloading point, it could be eliminated by the expansion of the transloading facilities, a task that could be accomplished rather easily and probably within one month.

The narrow-gauge rolling stock park probably would not be a limiting factor in the attainment of the theoretical capacity of the P'ing-hsiang-Hanoi line. Although freight cars and locomotives are not plentiful in North Vietnam, Chinese narrow-gauge rolling stock from the Kunming Railroad Bureau could be used to supplement a deficiency in the North Vietnamese rolling stock park. Furthermore, rolling stock previously used to move seaborne traffic between Hanoi and Haiphong could also be used. Repair facilities are believed to be adequate to service the increase in the active park. A shortage of narrow-gauge tank cars for carrying petroleum probably would be the only difficulty encountered by the North Vietnamese as far as rolling stock is concerned. Some petroleum products could be moved in drums by rail, but would require considerably more time than movement by tank cars. The inability to divert all petroleum shipments to the rail system could be the most serious problem for North Vietnam in case Haiphong channel is blocked.

- 11 -

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It is estimated that the actual time on the railroad to transport goods between Hanoi and Haiphong is about 5 hours. The time required for freight to move between Hanoi and Fort Bayard is estimated to average about 2 1/2 days, including one day for transloading at P'ing-hsiang. For those goods originating in Haiphong, such as cement, at least five hours must be added to the 2 1/2 days. During the first few weeks, confusion in rerouting goods, reallocating and possibly obtaining more rolling stock, and reassigning personnel, would probably cause some tie ups and, in general, lengthen the average rail time. In the long run, however, diversion of goods to rail transport through Communist China would not cause undue delay nor create serious problems for either the North Vietnamese rail or the Chinese rail system.

2. Road and Air Transport

Two road systems connect Fort Bayard and Hanoi. One of these generally parallels the railroad between the two cities and the other follows the coastline. If necessary these roads could be used to supplement the transportation by rail of the goods shifted to South China ports. Although sufficient road capacity exists to transport considerable quantities, road transport would probably be used only as a last resort, because of a shortage of trucks, vehicle spare parts, and fuel. Since spare parts and fuel are imported, the North Vietnamese would not increase the use of trucks during a

- 12 -

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blockade unless absolutely necessary. Small amounts of high priority items could be flown from Chinese airfields to North Vietnam. Shortages of spare parts and fuel for aircraft in both North Vietnam and China, however, would limit the use of air transport unless an airlift were organized and supported by the USSR.

- 13 -

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IV. Effects of a Blockade on Expansion of Transport Facilities

A partial blockade of Haiphong port would probably not significantly encourage the expansion of other transport facilities within the short period of a few months, mainly because the rail system has the capacity to carry most of the cargo that would be diverted from Haiphong. In the long run, however, the additional cost and time of transporting the trade through China would probably encourage the expansion of other ports and road and rail service to those ports. For example, some expansion in the port of Ben Thuy has been underway and the main rail line south to Ben Thuy is being rehabilitated. This work might be speeded up but, on the other hand, blockage of Haiphong might result in more difficulty in getting materials to do the work.

Construction work has been underway for several years to convert the gauge of the rail line between Hanoi and P'ing-haiang from meter gauge to standard gauge, the same as the Chinese system. It is conceivable that if the port of Haiphong were to be obstructed for a considerable period of time that work on this project would be stepped up. Communist China has sufficient materials and capacity to do this work if necessary.

- 14 -

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5. Prospects For Increases in Soviet Crude Oil Production Above Plan Levels

It is believed that the USSR has the capability to reach those levels of production of crude oil scheduled for the coming years (e.g., 390 million tons in 1970), but any significant plan overfulfillment or upward revision of the plan is not likely. Expansion of the crude oil production base through the drilling of exploratory and development wells and the construction of crude oil gathering facilities does not provide for any shut-in capacity in the sense understood in the US. In past years the actual volume of drilling in the USSR has been less than plan. Similarly, the water flooding program, which is assuming growing significance as a means for increasing the annual crude oil output, is not directed toward the establishment of un-used production capacity. More recently, in fact, problems in expansion of the water flooding program have been encountered. Thus, it is probable that all of the new crude oil production capacity resulting from drilling and water flooding has had to be utilized to meet annual output goals. Finally, with the limited funds available, investments will be made only insofar as they contribute to the immediate development of the economy.

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